

PRELIMINARY COMMENT EVALUATION on Section 4 Preliminary Draft EPA Comments provided in email from Jennifer LaPoma to Robert Law (May 22, 2017) (Preliminary Draft submitted by CPG to EPA March 10, 2017)					
No.	Section	General or Specific	Page No.	EPA Comment 5/2017	Evaluation of Response 11/2017
G1		General	--	An overarching map(s) should be included that presents the reaches and their boundaries, and associated text that presents the rationale for the reach boundaries that were selected.	The response is partially accepted. Text with rational has been sufficiently added. However, the overarching map is still missing. An overall site map should be included that presents the reach boundaries discussed in Section 4 (similar to Figure 1-2, from the 2015 RI Report)
G2		General	--	For consistency, figures should include concentration gradients used in the lower 8.3 mile FFS and ROD.	EPA will accept the concentration gradients as presented while EPA considers the interim remedy approach.
G3		General	--	The method/procedure should be identified that was used to generate the bathymetric surfaces for the post dredge and single beam surveys. Also, the uncertainty should be characterized in the bathymetric differences presented in the reach by reach analysis.	The response is accepted.
G4		General	--	The model used to generate the bed shear stresses presented in the analysis should be identified. Also, note if this model was reviewed by EPA and if the inputs are consistent with the hydrodynamic model used for contaminant fate.	Comment will be evaluated when all appendices referenced in this draft are provided. Information regarding the model used to generate bed shear stresses has not yet been provided for review (See Detailed Comment #5).
G5		General	--	Physical and chemical water column data, where available, should be presented and discussed.	Physical and chemical water column data are not presented in Section 4. The location and discussion of these data elsewhere in the RI (e.g., Section 3 and/or Section 6) should be confirmed.
G6		General	--	All COPCs should be addressed. Less information would be appropriate for some lower risk COPCs. The early paragraphs of subsection 4.1.2, Sediment Contamination Patterns, use narrative (e.g., contaminant inventory and peak concentrations) that groups contaminants together for the discussion. However, the discussion is more focused on 2,3,7,8 TCDD as indicated by the related figures. Therefore, the discussion should use the specific chemical name, 2,3,7,8 TCDD, and not use general terms. With the use of 2,3,7,8 TCDD, if the language needs to be revised based on other chemicals being co-located (or not co-located), as discussed at the end of the subsection, then the language should be revised.	The response is accepted.
G7		General	--	Ensure that all information presented in the RI is retained (e.g., sections 3.5, 3.6, 3.7, 4.1, and 4.2 are being replaced and information in those sections should not be lost).	For reaches provided in the latest draft Section 4 of RI (from RM17.4 to RM7.8), the response is accepted.
1	Figures 4.2.X-1 ¹	Specific	--	Bathymetry legend: Add one or more values to the color gradient legend bar. It currently shows only minimum and maximum values.	The response is accepted.
2	Figure 4.1-1 ²	Specific	--	Reach division markers on graphs: Add the actual RM value where the red dashed vertical line (“subreach boundaries”) crosses the X-axis.	The response is not accepted. Labels should be added.

¹ Comment originally referred to Figure 4.1-1 in preliminary draft.

² Comment originally referred to Figure 4.1-2 in preliminary draft.

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3	Figure 4.2.1-3 (and other SSS figures) ³	Specific	--	Sediment Types legend: The sediment types presented in the legend should be described in the text. For example, what percentage of sand needs to be present in a sample for a “silt” to be classified as “silt and sand”. If this information was extracted from side scan sonar results, revise the legend title accordingly.	The response is accepted.
4	4.1.1	Specific	--	Sediment Characteristics and Sediment Bed Evolution: The figure associated with this text (“It also reflects net erosion along portions of the outer bend (Figure 4.1-5)...”presents differential bathymetric analyses from 1932 to 2004, 1976 to 2004, 1976 to 1989, and 1989 to 2004. However, Section 4.1 should also reference the sequential differential bathymetric analyses presented in Figures 4.1-11. Also, text describing these analyses and the observed localized erosion/deposition patterns (i.e., comparing Figure 4.1-10 against Figure 4.1-11 series) should be added to this section.	The response is accepted.
5	Figure 4.2.1-3 (and other figures with silt percent) ⁴	Specific	--	Percent silt legend: A description of the sediment types presented in the legend should be described in the text. For example, what percentage of sand needs to be present in a sample for a “silt” to be classified as “silt and sand”. Also, the significance of “20% silt” should be described in the text.	The response is not accepted.
6	All figures showing reach boundary locations ⁵	Specific	--	Reach boundaries: A red line denoting the reach boundaries should be added to these figures.	The response is accepted.
7	Figure 4.2.5-17 ⁶	Specific	--	The significance of 50 ng/kg and 5 ft, which are referenced in the legend, should be identified. Also, the figure should provide a definition for the hatched area.	Although the text includes a discussion of the hatched areas depicted in Figure 4.1-17, this information is not included on the figure as requested. In addition, the significance of the 50 ng/kg and 5’ thresholds are not discussed in the text nor noted on the figure.

³ Comment originally referred to Figure 4.1-3 in preliminary draft.

⁴ Comment originally referred to Figure 4.1-8 in preliminary draft.

⁵ Comment originally referred to Figure 4.1-15 in preliminary draft.

⁶ Comment originally referred to Figure 4.1-16 in preliminary draft.

DETAILED COMMENTS on Section 4 (Section dated August 2017)				
No.	Section	General or Specific	Page No., paragraph	EPA Comments – 11/2017
1	4	General	--	Figures of Surface and Subsurface Contaminant Concentration Over Erosion Deposition Patterns have been developed for 2,3,7,8-TCDD (e.g. Figure 4.2.3-7), but not the other COPCs. Please provide these figures for all reaches and for PCBs, DDx, mercury, HMW PAHs, and LMW PAHs. Also note that the list of COPCs discussed in the RI can potentially change based on the results of the Baseline Ecological Risk Assessment (BERA).
2	4	General	--	<p>Figures of Surface and Subsurface Contaminant Concentration Over Erosion Deposition Patterns have multiple locations overlapping which makes it difficult to discern results for each individual sample. This may be corrected by showing results of each core within a core cluster at an offset and indicating the location with a leader line. Some examples where this overlapping issue exists are as follows:</p> <ul style="list-style-type: none">• Figure 4.2.2-10b: G0000172 and 13B-0563 are overlapping• Figure 4.2.2-11a: Results of the core cluster near RM 15 are hard to see because of overlapping• Figure 4.2.2-14b: G0000172 and 13B-0563 core results are overlapping• Figure 4.2.3-10c: Overlapping issues at core clusters near RM 12.5 and surface grab sample LPRT13F near 12.75• Figure 4.2.3-16c: Overlapping issues at core clusters near RM 12.5• Figure 4.2.4-16b: Overlapping issues at core clusters near RM 11.5• Figure 4.2.4-17b: Overlapping issues at core clusters near RM 11.5• Figure 4.2.5-10b: Overlapping issues in the RM 10.9 point bar for all COPC figures• Figure 4.2.6-9a: Overlapping issues in core cluster near RM 10• Figure 4.2.7-14c: Overlapping issues in core clusters at the downstream end of this reach near RM 7.75
3	4	General	--	Composite samples should be depicted on the figures of Surface and Subsurface Contaminant Concentration Over Erosion Deposition Patterns, for example, the G0000151 composite sample discussed in Section 4.2.6 on the fifth paragraph of page 39.
4	4	General	--	It is noted that throughout the text, contaminant levels are compared to designated concentrations (sometimes 1 ppt or 100 ppt for dioxin, 0.5 ppm for PCBs, etc., see page 37). The basis/reference for these comparison levels should be provided. This could be addressed with a simple table that includes the identified COPCs and reference values (background value from Lower 8.3 ROD or reference from 17-mile risk assessment).
5	4	General	--	Once all appendices and sections referenced in this draft are provided, EPA reserves the right to reexamine statements made in the text referring to such appendices/sections. For example, on page 10 the text states that: “The downstream parts of this reach are within the upstream extent of the salt front under rare, extreme low flow conditions (see Section X).”
6	4	General	--	<p>Discrepancies between the SSS sediment type and core/probing results are identified within the text at multiple locations, some examples of which include the following:</p> <ul style="list-style-type: none">• Section 4.2.3, Page 15, second paragraph, seventh sentence: The text states that: “This is also seen in the probing data, which indicates multiple locations containing silt in the surface sediments in the eastern shoal between RM 13.85 and RM 13.7 in the region classified as Gravel and Sand by the SSS survey (Figure 4.2.3-3).”• Section 4.2.3, Page 16, third paragraph: The text states that: “The fine sediment content is high throughout the core and increases from the 1.5–2.5 feet segment to the surface (37%, 57%, and 95%), indicating a silt deposit that was not identified within the larger Silt and Sand deposit. The probing data between RM 12.8 and RM 12.7 indicate that most of the probed locations along the inner bend contain finer sediments than those mapped by the SSS.” Both these sentences indicate potential inaccuracies in the SSS results.• Section 4.2.4, Page 23, second paragraph, fourth sentence: The text states that: “The fine sediment composition of this sample is 46%, suggesting another instance of a fine sediment pocket not captured by the SSS survey.”• Section 4.2.4, Page 26, fifth paragraph, second sentence: The text states: “Contamination patterns and sample sediment composition in this reach illustrate the limitations of the SSS mapping of sediment type and reinforce the finding that the higher concentrations are associated with finer sediments.” A detailed discussion on these limitations should be provided in a new sub-section.• Section 4.2.6, Page 38, first paragraph, second sentence: The text states that: “However, both contain high fines content indicating they were collected in fine sediment pockets too small to be delineated by the SSS survey.” <p>The RI Report will need to include a section that describes the side scan sonar investigation including its limitations and uncertainties at estimating grain size and calibration steps involving site data. This section should identify all areas where discrepancies between the SSS results and the grain size determinations from sediment cores/probing have been observed and areas where sediment pockets too small to be delineated by the SSS survey exist. In addition, the potential for temporal changes between the time of the SSS survey and the time of the core collection should be acknowledged and discussed, especially since the SSS was conducted following flow events of over 11,500 cfs on April 4 and 5, 2005.</p>

DETAILED COMMENTS on Section 4 (Section dated August 2017)				
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7	4	General	--	Please revise this section (or an earlier section) to include a subsection presenting a discussion of the limitations of the sediment sampling program and provide evidence that a bias towards finer sediments exists. Implications of this bias in the sampling program on the existence of pockets of fine grained sediments with higher contaminant concentrations should be discussed in detail in this section, including the implications for understanding the distribution of contamination at the site and identifying areas for potential remediation.
8	4	General	--	For clarity, this section should define what is meant by surface sediments (i.e., 0-6 inches).
9	4	Specific	Page 1, first paragraph	Please edit the first sentence to read as follows: “LPR sediments contain a wide range of contaminant concentrations due to factors such as source location, nature of the sediments, spatial and temporal history of navigation channel dredging, and depositional/ <i>erosional</i> history.” (<i>emphasis added to identify requested change</i>)
10	4.1	Specific	Page 1, third paragraph	Please edit the last sentence to read as follows: “More importantly, these reaches were segmented to explain the relationship between geomorphic features, channel dredging, sediment type, and depositional/ <i>erosional</i> history on the observed patterns of contaminants in sediments.” (<i>emphasis added to identify requested change</i>)
11	4.1	Specific	Page 4, first paragraph, fifth sentence	Please edit the text to read as follows: “The fine sediments along the inner bend tend to form point bars, most notably the RM 10.9 point bar, which was dredged and capped in 2013 (<i>excluding the utility corridor</i>) and...” (<i>emphasis added to identify requested change</i>)
12	4.1	Specific	Page 4, first paragraph, fifth sentence	The text states that the dredging and capping was done to address 2,3,7,8-TCDD levels. The text should be revised to state that the removal action was performed to address high concentrations of 2,3,7,8-TCDD, PCBs, PAHs, and mercury.
13	4.1	Specific	Page 4, second paragraph, eighth sentence	Please edit the text to read as follows: “The highest concentrations of all four contaminants are contained primarily in <i>finer</i> sediments.” (<i>emphasis added to identify requested change</i>)
14	4.1	Specific	Page 5, first paragraph	Please edit the first sentence to read as follows: “Examining the data at a finer spatial scale, as is done in Section 4.2, reveals patterns in contaminant concentrations that are largely driven by variations in sediment type and depositional/ <i>erosional</i> history.” (<i>emphasis added to identify requested change</i>)
15	4.1	Specific	Page 5, first paragraph, seventh sentence	The text states that: “These programs involved multiple attempts to collect sediment at these locations, and thus tend to be biased toward finer sediments. This is evident in the frequency at which samples of fine sediment were collected in SSS defined coarse sediment areas.” Provide clarification on how the multiple attempts make the sampling biased toward finer sediments. Refer to general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.
16	Figure 4.1-2	Specific	--	A thin brown line between June 2011 and July 2011 is not defined in the legend. Is this the 2011 Pre-Irene survey? If so, it needs to be corrected to match the legend.
17	Figure 4.1-3	Specific	--	Please make the following edits to this figure: <ul style="list-style-type: none">• Add tick marks below the x-axis• Include actual concentration value on graph in addition to the color gradient
18	Figure 4.1-6	Specific	--	The footnote text states: “Data limited to the LPR. Sediments classified into clays + silts and sands using grain size data.” Please revise to clarify if “Data limited to the LPR” utilized all LPR sediments data, or just a subset. Also provide a brief discussion of the data that went into development of this figure.
19	Figure 4.1-8	Specific	--	Unfilled colored circles in the figures should be identified in the legend.
20	4.2.1	Specific	Page 7, second paragraph, first sentence	The text states that: “Only seven sediment samples were collected in this reach and four were surface sediment grabs, reflecting the general absence of recoverable sediment.” Please revise the text to clarify how this reflects the lack of recoverable sediment. Refer to the general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.
21	4.2.1	Specific	Page 7, third paragraph, first sentence	The text compares contaminant concentrations to 1 ng/kg for 2,3,7,8-TCDD, 0.5 mg/kg for PCBs, 0.05 mg/kg for DDX, etc. Please provide clarification in the text on the use of these values for comparison and discuss their significance (e.g., are they risk based and, if so, what risk are they based on?).
22	4.2.1	Specific	Page 7, third paragraph, fifth sentence	The text states that: “River-wide trends in HMW PAH concentration suggest the elevated levels observed above RM 16.5 likely originated from sources upstream of the Dundee Dam (Section 4.1).” Please revise the text to include a discussion of potential sources upstream of Dundee Dam as well as the results of any loading analyses performed that quantifies the contribution of upstream sources to the Lower Passaic River study area.
23	4.2.1 and Figure 4.2.1-10	Specific	Page 7, third paragraph, sixth sentence	The text states that: “LMW PAH are always less than 10 mg/kg, except for the 6- to 18-inch section of CLRC-096...” The core depth classification of 6 to 18 inches is inconsistent with the rest of the section. Please edit this to read 0.5–1.5 feet in order to be consistent. Also, please change reference of “Figure 4-11” to “Figure 4.2.1-10”. The 19.6 mg/kg concentration called out in the text is colored in Figure 4.2.1-10a as “>20 mg/kg”. Fix discrepancy.

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24	Figure 4.2.1-2 (and others)	General		Please identify the units for the Maximum Shear Stress in the legend. This change should be made on all Shear Stress figures.
25	Figure 4.2.1-3a – 4.2.1-3b	Specific	--	What are the sources of the percent silt information (i.e., identify the sampling program(s) they are from)? What is the significance of the 20% silt value used in the legend? To address these questions, the figure should include a footnote(s) explaining these items. Also see Preliminary Comment #5.
26	Figure 4.2.1-4a – 4.2.1-4b	Specific	--	If no data is available from the 2007 bathymetry upstream of RM 16.5, this should be clearly identified on the figure.
27	4.2.2	Specific	Page 8, sixth paragraph, first sentence	The text states that: “ Like the bottom upstream , the sediment from Saddle River to the West Eighth Street Bridge is largely Gravel and Sand” The bolded text is not clear to the readers. Please revise to include more specific descriptive words.
28	4.2.2	Specific	Page 9, second paragraph, fifth sentence	The text states that: “The accumulation of sediment along the inner bend at RM 14.5 can be observed between the 1989 and the 2004 bathymetries (darker green along the inner bend of the channel).” This accumulation was not located in any figure. A figure with the comparison should be provided to supplement the text.
29	4.2.2	Specific	Page 10, first paragraph, fifth sentence	The text states that: “PAH levels are similar to those measured in the Dundee Dam to Saddle River reach (Figures 4.1-8e and 4.1-8f), and concentrations in the coarse upstream sediments of this reach are similar in magnitude to those in the finer Silt and Sand deposit and in further downstream sediments.” This paragraph discusses concentrations for several COPCs and therefore the sentence should be edited to specify that it refers to concentrations of PAHs.
30	4.2.2	Specific	Page 11, third paragraph, third sentence	Please edit the text to read as follows: “Total PCB levels <i>in surface sediments</i> are less than 0.5 mg/kg at nine of the ten locations, and are approximately 3 mg/kg in all segments below 1.5 feet in CLRC-084.” <i>(emphasis added to identify requested change)</i>
31	4.2.2	Specific	Page 12, third paragraph, second sentence	Please change “...9 to 20 mg/kg range” to “...8 to 20 mg/kg range” to match Figure 4.2.2-15.
32	Figure 4.2.2-8	Specific	--	These figure sets are currently missing for the RM 17.4 to RM 15.6 reach and for PCBs, DDX, PAHs, and mercury. Please provide similar figures for each COPC and each discussed reach because the correlation of COPC concentrations with the presence of fines is an important theme of this RI section. Having these figures for each discussed reach will provide a visual confirmation of the contamination trends identified in the section.
33	Figure 4.2.2-13a	Specific	--	Define the acronym “MPA” as mass-per-area on the figure as a footnote.
34	4.2.3	Specific	Page 14, fourth paragraph, last sentence	The text states that: “The three Cs-137 profiles between RM 13.7 and RM 13.2 (CLRC-079, CLRC-080, CLRC-078) likely reflect infilling after the 1976 maintenance dredging.” Include a discussion on how the profiles reflect infilling. Also, the pattern for CLRC-078 shows an increase in Cs-137 with depth which is different than the other cores which show a relatively uniform depth profile which should be included in the discussion.
35	4.2.3	Specific	Page 16, first and second paragraph	This paragraph highlights sample CLRC-078 as having higher concentrations than other samples in this region. However, concentrations in 12A-0486 has higher concentrations than CLRC-078 for 2,3,7,8-TCDD and total PCBs. In fact, 12A-0486 has by far the highest concentrations of 2,3,7,8-TCDD in the entire reach and this is not discussed in the text. Concentrations in 12A-0486 are only listed in footnote 17. Also, the second reference to the 1.5-2.5 feet segment in footnote 17 is most likely referencing the 0.5-1.5 feet segment. Verify and correct as necessary.
36	4.2.3	Specific	Page 16, second paragraph, last sentence	Core 13B-0572 is described as being located on the eastern shoal, but in the CPG’s mapping for the conditional simulation, the location of this core is characterized as “Upstream Non-shoal”. Please clarify if different criteria were used in the conditional simulation mapping and Reach by Reach discussion. Please indicate if other cores are characterized differently in the two different analyses.
37	4.2.3	Specific	Page 16, last paragraph	The text states, “The small areal extent of the contamination in CLRC-077 is indicated by a nearby core in the same Silt and Sand deposit (core 13B-0571)...”. The use of “indicated” implies more certainty than the data support. Please revise the text to acknowledge the uncertainty in the conclusion, (e.g. “suggested”).
38	4.2.3	Specific	Page 17, third paragraph, fourth sentence	The text states that: “The bathymetry data (Figure 4.2.3-14) suggest that the core surface here represents the minimum bed elevation since 2007.” According to Figure 4.2.3-14c the minimum bed elevation occurred in 2011. Please review this, verify and correct the text as appropriate.

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39	4.2.3	Specific	Page 18, fourth paragraph	This paragraph should include a discussion of the elevated subsurface HMW PAH concentration in sample 13B-0560.
40	4.2.3	Specific	Page 19, second paragraph, last sentence	The text states that: “It may also reflect differences in sources and loading histories.” Please reference the appropriate section in the RI where sources and loading histories have been discussed.
41	4.2.3	Specific	Page 19, last paragraph, first sentence	Please clarify in the text that “... DDx and mercury in this reach increase longitudinally” is intended to mean “in the downstream direction”.
42	4.2.4	Specific	Page 21, fifth paragraph	The discussion of factors affecting bathymetry changes near the Route 3 Bridge should include the constriction of the channel associated with the construction of the new Route 3 Bridge. Please revise the text to account for this information.
43	4.2.4	Specific	Page 21, last paragraph, first sentence	The text states that the salt front occasionally extends into and through this reach. A reference for this statement should be provided in the text.
44	4.2.4	Specific	Page 22, second paragraph	Mercury concentrations at 13B-0555 should also be discussed in addition to the other COPCs due to the elevated levels of mercury detected throughout the sediment core profile.
45	4.2.4	Specific	Page 22, second paragraph, last sentence	The text states that: “The highest mercury concentrations (Figure 4.2.4-13) upstream of RM 7.8 in the LPR are found in the 1.5–2.5 feet segment of CLRC-073 at RM 12.31 (42 mg/kg).” Looking at the figure, it appears as though the 0.5-1.5 ft interval has the highest concentration. Please verify and correct the text as necessary.
46	4.2.4	Specific	Page 22, fourth paragraph, second sentence	The text states that: “Cores G0000169, CLRC-073, G0000166, and 13B-0552 have much lower levels below 2.5 feet.” Per the available data provided by the CPG to EPA, cores G0000169 and G0000166 do not have recoverable depths below 2.5 ft. Please revise the text to account for this information.
47	4.2.4	Specific	Page 22, fifth paragraph, first sentence	Please revise this sentence to include the identifying name of the cores that were collected.
48	4.2.4	Specific	Page 23, 2 nd paragraph, third sentence	The text states that: “...levels on the eastern side slope are in the 250 to 500 ng/kg range (13B-0554 and 13B-0570).” This is an overgeneralization because 13B-0554 only has one level in the 250 to 500 ng/kg range (0.5 to 1.5 feet) out of 4 levels and 13B-0570 is only a surface sample. Please clarify and revise the text accordingly.
49	4.2.4	Specific	Page 23, third paragraph, last sentence	Please edit the text to read as follows: “The two downstream samples within the same deposit contain lower levels of contaminants, with higher levels in the 1.5–2.5 feet segment of 13B-0548 (RM 11.46) than in the surface and 0.5–1.5 feet segments, a likely consequence of the higher percent fine sediment composition of the 1.5–2.5 feet segment (64%) than the surface (31%) and the 0.5–1.5 feet segment (28%).” (<i>emphasis added to identify requested change</i>)
50	4.2.4	Specific	Page 23, last paragraph, last sentence	The text states that: “This core has higher total DDx levels in the surface (0.27 mg/kg) than other samples collected in Gravel and Sand deposits. Levels of the other contaminants are generally similar to the lower concentrations measured in the Gravel and Sand deposit of this reach, suggesting the elevated total DDx level is anomalous.” Please revise the text to discuss possible reasons for this anomaly.
51	4.2.4	Specific	Page 24, third paragraph, first sentence	The text states that: “...no samples were collected within the main channel.” Please revise the text to discuss the rationale for not collecting samples in the main channel within this reach and potential impacts on the understanding of contaminant distributions in this area, if any.
52	4.2.4	Specific	Page 25, third paragraph, first sentence	The sentence describing 2,3,7,8-TCDD concentrations in 12A-0481 notes lower concentrations in the 1.5-2.5 feet segment and further below. However, Figure 4.2.4-10c does not show any segments further below from 2.5 feet in 12A-0481. If there were samples from deeper segments, please update Figure 4.2.4-10c and concentration figures for other contaminants, otherwise revise the text.
53	4.2.4	Specific	Page 26, third paragraph, second sentence	The text states: “...a likely result of the diminished influence of the previously mentioned upstream source (noted in Section 4.2.1), and the differing PAH sorption properties.” Section 4.2.1 has insufficient details on this upstream source. Please revise the text to reference the appropriate section in the RI where sources and loading histories have been discussed.

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54	Figure 4.2.4-5a	Specific	--	Please revise the figure to provide clarification that 1932 and 1948 bathymetry data is not available for this section of the reach. The RI Report should include details of the available bathymetric surveys conducted at the site and discuss the extents of each survey.
55	4.2.5	Specific	Page 27, third paragraph, second sentence	Please revise the text to read as follows: “This point bar, which abuts Riverside County Park, was dredged and capped in 2013 and 2014 (excluding the utility corridor) following the finding of high surface contaminant levels (e.g., 2,3,7,8-TCDD in excess of 50,000 ng/kg).” See Comment #11 related to similar text on the first paragraph of page 4.
56	4.2.5	Specific	Page 31, third paragraph, second sentence	The text states that: “...purple area has high surface concentrations (middle panel)”. Please revise the parenthetical to the right panel.
57	4.2.5	Specific	Page 32, third paragraph, second sentence	The text states that “Of these eight cores, seven were collected in 2011 post-Hurricane Irene...” However, figure 4.2.5-19 shows 11B-0353 core being collected in 2011 pre-Hurricane Irene. Please revise to ensure that the text and figure are consistent.
58	4.2.5	Specific	Page 32, third paragraph, last sentence	The text states that: “Erosion between 2008 and 2010 at the location of the core collected in 2008 (G0000163 at RM 11.09) removed approximately 1.5 feet of sediment and penetrated into the layer of higher 2,3,7,8-TCDD concentrations below the top 0.5 feet of sediment.” Therefore, potential contamination could have been mobilized during this period where deep contamination was exposed. The text should be updated to include this observation.
59	4.2.5	Specific	Page 33, third paragraph	A discussion of correlation of other COPCs with TCDD trends is absent from the text (i.e. discussion of Figures 4.2.5-20a to 20c). The relevant discussion for Figure set 4.2.5-20 should be included.
60	4.2.5	Specific	Page 33, fourth paragraph, third sentence	It is unclear if both 13B-0542 and 12E-0364 cores have coarse sediments throughout the entire length of the core. Please revise the text to include a discussion of the percent fines within these cores.
61	4.2.5	Specific	Page 34, second paragraph	Please edit the first sentence to read as follows: “To summarize, the high-density sampling data collected as part of the remedial design for the RM 10.9 removal provided a detailed evaluation of the characteristics of the point bar and the nature and extent of contaminants, and confirm the conceptual understanding of the relationship between geomorphic features, dredging, and depositional/ <i>erosional</i> history on the observed patterns of contaminants in sediments.” (<i>emphasis added to identify requested change</i>)
62	Figure 4.2.5-3c and 4.2.5-3d	Specific	--	Please revise the figure to provide clarification that 1932 bathymetry data are not available for this section of the reach. As requested in the specific comment for Figure 4.2.4-5a (Comment #54), the RI Report should include details of the available bathymetric surveys conducted at the site and discuss the extents of each survey.
63	Figure 4.2.5-9	Specific	--	It is unclear how bathymetric change categories within the navigation channel were derived from the single beam bathymetry (4 th panel) when no data are shown from changes in various years (first 3 panels). Were multibeam surveys also used to draw the categories? If so, how is this different from Figure 4.2.5-7? Please clarify this in a revision to the figure.
64	Figure 4.2.5-17	Specific	--	i. Please provide a legend for purple and blue hatch on the figure (See Preliminary Comment #7) ii. Provide similar figures for PCBs and PAHs
65	Figure 4.2.5-18	Specific	--	The pink gridded areas should be defined in the legend.
66	4.2.6	Specific	Page 38, first paragraph, third sentence	The text states that in 13B-0538 and 13B-0536: “contaminant levels reflect these high fine contents.” Please specify in the text that this is only true for 13B-0538 as the surface sample of 13B-0536 has higher concentrations than subsurface samples (except for mercury) even though fines content is greater in subsurface segments of 13B-0536.
67	4.2.6	Specific	Page 39, third paragraph, last sentence	The text states that: “A sample in the channel at RM 9.51 (CLRC-059) has data available for only total PCBs and mercury, ...” Please update the text to indicate whether there were other COPCs non-detects in this core or if they were not analyzed for.
68	4.2.6 and Figure 4.2.6-8b	Specific	Page 39, fourth paragraph, second sentence	The text states that grab samples 13B-0517 and 13B-0518 “were collected in SSS identified Sand...” However, in Figure 4.2.6-8b, 13B-0518 appears to have been collected in SSS identified Silt (or just within the boundary of the silt deposit). If this is correct, please alter explanation in the text. Perhaps this difference is another instance where the fine sediment composition of the sample did not match the SSS. Refer to the general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.

DETAILED COMMENTS on Section 4 (Section dated August 2017)				
No.	Section	General or Specific	Page No., paragraph	EPA Comments – 11/2017
69	4.2.6	Specific	Page 40, second paragraph, first sentence	The text incorrectly references Figures 4.2.6-14a through 4.2.6-14e. The correlation figures are 4.2.6-15; the text should be corrected.
70	4.2.6	Specific	Page 40, second paragraph, second sentence	The text states that: “Subsurface concentrations and MPA are also well correlated, though mercury exhibits a weaker correlation than the other contaminants.” Mercury has a weaker correlation for subsurface for more than one reach. The text should discuss possible reasons for this. Also, it appears that the MPA correlation for total DDx to 2,3,7,8-TCDD is weaker than other correlations. The strong verses weak correlation method (e.g., visual or an internal R-squared threshold) should be identified.
71	4.2.6 and Figure 4.2.6-16c and 4.2.6-17c	Specific	Page 40, sixth paragraph, third and fourth sentences	The text indicates the bottom of CLRC-58 as having comparable HMW PAH concentrations to the surface sample of 12A-0474. However, figure 4.2.6-16c shows the bottom of CLRC-58 as 0.0 – 15 mg/kg. Figure 4.2.6-17c also does not show the bottom of CLRC-58 as having the maximum LMW PAH concentration in this region as claimed in the text. The apparent contradictions should be resolved in the revised text.
72	4.2.6	Specific	Page 41, first paragraph	The text does not discuss lateral trends within this point bar, similar to what was observed at the RM 10.9-point bar. Please include a discussion of similar lateral trends, if any, or state that there are no lateral trends similar to the RM 10.9-point bar.
73	4.2.7	Specific	Page 42, first paragraph, first sentence	The figure reference should be Figure 4.2.7-4c not 4b if referring to the presence of rock and coarse gravel sediment downstream of the confluence of the Second River. If text is referring to a different shallow deposit on the 1975 map, it should be clarified in the revised text.
74	4.2.7	Specific	Page 42, second and third paragraphs	References to Figure 4.2.7-5a or b should be revised to refer to Figure 4.2.7-5 only.
75	4.2.7	Specific	Page 43, first paragraph, fourth sentence	The Cs-137 profile described at the silt deposit at RM 7.9 (CLRC-049) does not have a buried well-defined peak but relatively small and steady increase of 0.15 pCi/g total over the 50 feet depth. Rather than significant sediment accumulation, this profile may suggest both deposition and potential mixing. The text should be revised to suggest this interpretation.
76	4.2.7 and Figure 4.2.7-13a	Specific	Page 44, first paragraph, first sentence	The text states: “Upstream of RM 8.75, the highest surface concentrations of 2,3,7,8-TCDD, total PCBs (Figure 4.2.7-12), total DDx (Figure 4.2.7-13), and mercury (Figure 4.2.7-14) in the channel were measured in LPRT10A...” Footnote 44 also reports total DDx concentration at LPRT10A as 0.14 mg/kg. This is inconsistent with Figure 4.2.7-13a which shows surface sample at CLRC-057 having the highest concentration (>0.5 mg/kg) and LPRT10A as having a concentration within the range 0.05 to 0.1 mg/kg. The discrepancy should be resolved.
77	4.2.7	Specific	Page 44, second paragraph	A discussion should be provided of all the cores shown on Figure 4.2.7-15, including 13B-0515, CLRC-056, 12A-0472, 13B-0511, 13B-0510, 12A-0470, 13B-0509, G0000150, CLRC-055, CLRC-054, and 12A-0468. At a minimum, if applicable, the core information should be grouped and language added to summarize the interpretation of theses cores as a group.
78	4.2.7	Specific	Page 44, second paragraph, last sentence	The text states that: “...the nature of the sediments collected indicate they likely represent small pockets of fine sediment found by the coring program as the field crew searched for recoverable sediment.” This should be confirmed using the core results and if percent fines in the core were not determined then provide clarification in the text. Refer to the general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.
79	4.2.7	Specific	Page 44, third paragraph, fourth sentence	The text states that: “Subsurface levels of some contaminants are also similarly higher (5 mg/kg total DDx in the 1.5–2.5 and 3.5–5.5 feet segments, and 10.4 mg/kg mercury in the 2.5–3.5 feet segment).” Please provide the location name for this discussion. If referring to 13B-0509, note that mercury concentration stated in the text is accurate but subsurface DDx at this location is less than 0.05 mg/kg.
80	4.2.7	Specific	Page 45, second paragraph, first sentence	The text states that: “While coarser sediments are found on the outer bend, corresponding to the higher shear stresses there, the core 12A-0468 was collected within a fine sediment pocket and has correspondingly higher contaminant concentrations than other locations in coarse sediments.” Was the presence of the fines pocket determined based on core data or probing? Include text to indicate how deviations from the SSS survey were determined. Refer to the general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.
81	4.2.7	Specific	Page 45, second paragraph, last sentence	Revise “reminder” to “remainder” in “The reminder of the locations sampled until RM 8 contain lower contamination concentrations, consistent with the coarse sediments present here.” Also, LPRT09B is shown in Figure 4.2.7-12c as having >10 mg/kg of total PCBs, which is a higher concentration of total PCBs than in 12A-0468. LPRT09B also appears to be taken in coarse sediments and has a moderate detection of total DDx as well. These data seem

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				contrary to the stated trend of coarser sediments correlating with lower contaminant concentrations and this apparent contradiction should be acknowledged, or clarified.
82	4.2.7	Specific	Page 45, third paragraph, seventh sentence	DDx levels in the coarse sediment core CLRC-051 are high compared to other COPCs and does not follow the continuing trend of greater concentrations in finer sediments. Please provide a reason for this deviation of DDx from the trend in the revised text.
83	4.2.7	Specific	Page 45, third paragraph, ninth sentence	The text states that: “The 1.5–2.5 feet segment of CLRC-050 contains the highest contaminant levels in this transect, likely due to the higher fine sediments here.” However, this overlooks the higher total PCBs concentration at the 0.5-1.5 feet depth interval which is in the 2.0 to 10 mg/kg range despite having about 11% fine sediments. Please discuss this in the revised text and provide an explanation for this apparent contradiction.
84	4.2.7	Specific	Page 45, last paragraph, first sentence	The text states that: “Concentrations in the cluster of cores further downstream (CLRC-049, LPRT08E, and 12A-0465) are lower, corresponding to the coarse sediments here (fine composition is uniformly less than 10%).” However, Figure 4.2.7-11b shows the cluster of cores as within (or just within the boundary of) the SSS identified Silt deposit. Perhaps this observation is this another instance where the fine sediment composition of the sample did not match the SSS. Refer to the general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.
85	4.2.7	Specific	Page 46, fourth paragraph, second sentence	The text states that: “Levels in the samples collected outside the Silt deposit are sometimes higher indicative of small pockets of fine sediment.” This needs to be substantiated with percent fines from core results and the presence of higher concentrations alone cannot be indicative of the presence of fines. This also relates to the anomalous DDx concentration discussed in the comment for Section 4.2.4 on page 23, last paragraph (Comment #50) and it is possible that concentration was also due to a small pocket of fine sediment. Other anomalous concentrations are pointed out in Comments #81, #82, and #83. Refer to the general comment (Comment #7) requesting a new RI subsection discussing these limitations of the sediment sampling program.